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EPA Region 5 Records Ctr.



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ADDENDUM A
LIGHT NONAQUEOUS PHASE LIQUID EVALUATION
FIELD SAMPLING PLAN
LENZ OIL SITE
LEMONT, ILLINOIS

REVISION: 4
(REVISED PAGES ONLY)

JUNE 9, 1994

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MW-105 at which a NAPL was noted during abandonment procedures during Phase II of the RI). Figures 2 and 3 show the elevation of the water table and NAPL over the periods when water levels were collected. Points on the graphs in which ground water elevations are shown without corresponding NAPL elevations represent dates in which no NAPL was observed. Therefore, the NAPL has only been observed when the oil-water interface is below an elevation of 592.5 feet above mean sea level (AMSL) in monitoring wells G106L and MW-5S. Section 4.0 has a description of how high water table conditions would be handled.

In addition, a NAPL was observed when monitoring well G105L was abandoned. As discussed in the RI, this area was not excavated during the soil incineration activities because of the presence of the G105 monitoring well cluster.

2.0 SAMPLING PROGRAM

2.1 Schedule

The schedule is presented in Figure 4. The NAPL field investigation is tentatively scheduled to be conducted at the Lenz Oil site from July 25~~8~~ to August 18~~3~~, 1994. Analytical results are expected to be received by September 15, 1994 for the NAPL samples and by August 29, 1994 for the soil samples. ~~August 24, 1994, and~~ All of the data should be validated by October 6 ~~September 14~~, 1994. A technical memorandum will be submitted on October 27~~6~~, 1994 and a revised feasibility study will be submitted on November 25~~4~~, 1994. If the NAPL sampling is delayed because of a high water table, a revised schedule for the submittal of the Technical Memorandum and the revised

One soil sample will be collected from the 2-foot interval above the water table at Piezometer locations P-1 and P-13 through P-17 for analysis of the Contract Laboratory Program (CLP) Target Compound List (TCL) volatile organic compounds (VOCs), TCL semivolatile organic compounds (SVOCs), ~~and~~ TCL pesticides/polychlorinated biphenyl compounds (PCBs), and Target Analyte List (TAL) metals and cyanide based on the following rationale:

- P-1 - Samples were not collected from the material adjacent to former wells MW105 in previous investigations.
- P-13, P-15, and P-16 - Samples were not collected from adjacent soil borings during the RI.
- P-14 and P-17 - Samples were collected at shallow depths (i.e., to five feet).

If bedrock is encountered prior to reaching the water table at a boring location, a soil sample will not be collected. The soil samples will be collected in a manner similar to the procedures specified in the approved SAP with the exception that 2-inch diameter by 2-foot long split spoons will be used to collect the sample instead of the 5-foot long continuous CME samplers used during the RI activities.

Piezometers P-18 through P-21 will be installed at previously uncharacterized off-site locations. However, ~~s~~Soil samples will only be collected from the piezometer locations P-18 through P-21 and analyzed for CLP TCL VOCs, TCL SVOCs, ~~and~~ TCL pesticides/PCBs, and TAL metals and cyanide according to the November 1990 SAP if:

~~field observations and screening indicate the collection of a soil sample is appropriate based on the following rationale:~~

- ~~• ~~P 18 through P 21~~ — Piezometers ~~P 18 through P 21~~ will be installed at previously uncharacterized off site locations.~~
- Visual observation in the field indicates that the sample contains NAPL, i.e., because it is stained or has an oily appearance; and/or
- Field screening with a photoionization detector (such as an HNu detector) indicates that concentrations of volatile organics in the sample are elevated with respect to other soil sample locations.

If field observations and screening indicate NAPL is likely present, a soil sample will be collected from the 2-foot interval above the water table.

Soil samples will not be collected from the piezometer locations P-2 through P-12 and P-22 based on the following rationale:

- **P-2 through P-4** - Soil samples were collected to the base of the excavation from the adjacent soil boring (SB07) during the RI, thereby adequately characterizing the soil constituents.

- **P-5** - Soil samples were collected to a depth of 12.9 feet at the adjacent soil boring (SB20) during the RI.
- **P-11** - Soil samples were collected to the base of the excavation at the adjacent soil boring (SB11) during the RI.
- **P-6 through P-10, P-12, and P-22** - Soil samples were collected to bedrock from adjacent soil borings during the RI, thereby adequately characterizing the soil constituents.

If NAPL is encountered during the drilling of piezometers P-2 through P-12 and P-22 (i.e., based on visual observation and field screening), ~~a soil sample collected above the ground water table will not be needed to characterize the soil contamination because the~~ NAPL sampling results and the geotechnical results from the RI ~~will can~~ be used to estimate the concentration of each NAPL constituent in the soil. The concentration of each parameter in the soil will be calculated by: (1) using the residual NAPL saturation (as defined on page 5-17 of the ARMOS[®] user's guide contained in Enclosure 1 to Attachment 3 of this FSP Addendum A) and the specific gravities of the NAPL and the soil to determine the weight of NAPL per weight of soil, and (2) multiplying this number by the concentration of each individual chemical parameter detected in the NAPL. In addition, a maximum of three NAPL-contaminated soil samples will be collected and analyzed for CLP TCL VOCs, TCL SVOCs, pesticides/PCBs, and TAL metals and cyanide to confirm these calculated concentrations.

Soil samples will be collected in a manner similar to the procedures specified in the approved SAP with the exception that 2-inch diameter by 2-foot long split spoons will be used to collect the sample instead of the 5-foot long continuous CME samplers used

during the RI activities. For quality assurance/quality control (QA/QC) purposes, one rinsate blank of the decontaminated split spoon will be collected. In addition, a duplicate sample and a matrix spike/matrix spike duplicate (MS/MSD) sample will also be collected. The sample handling and packaging procedures outlined in the SAP and the QA/QC procedures included in the January 1992 Quality Assurance Project Plan (QAPP) Addendum will be followed. Environmental Standards, Inc. of Valley Forge, Pennsylvania will validate the soil data.

4.0 NAPL SAMPLING AND ANALYSIS

Prior to sampling, the water levels in monitoring wells G106L and MW-5S will be measured to determine the elevation of the ground water-NAPL interface. If the elevation of this interface exceeds 592.5 feet AMSL, the NAPL sampling will be postponed. As previously discussed, the NAPL is not generally present in the existing monitoring wells when the water table exceeds this elevation. To confirm the presence or absence of the NAPL in any of the new piezometers, the water table must be below the specified elevation. The USEPA will be immediately notified if a high water table is found, and the site water levels will be measured on a weekly basis until the water table is low enough for proper NAPL sampling. The schedule of the submittals to the USEPA and IEPA will be modified to incorporate the delays, as discussed in Section 2.0.

Based upon the results of the NAPL sampling, and in consultation with the USEPA and IEPA, additional piezometers may be installed if NAPL is detected in any of the outer ring piezometers (i.e., piezometers P-05 through P-09, P-12, P-17, P-18, and P-20 through

estimation error contours, and (3) profiles of the water and the total liquid saturation for specific locations.

4.2 NAPL Sampling and Analysis

The physical and chemical properties of the NAPL will be reevaluated to confirm the RI results. The samples of the NAPL will be collected from piezometers selected as indicated in Section 1.0, and submitted for laboratory analysis. The piezometers to be sampled will be selected in consultation with the USEPA and IEPA based upon NAPL thickness and distribution. Depending upon the NAPL found at the site, it is estimated that up to five samples will be analyzed. The NAPL samples will be analyzed as medium concentration samples for: (1) TCL VOCs, SVOCs, and pesticides/PCBs; (2) ~~target analyte list (TAL)~~ total metals and cyanide; (3) Toxicity Characteristic Leaching Procedure (TCLP) organics and inorganics; (4) specific gravity; (5) kinematic viscosity; and (6) gas chromatography fingerprinting. If a sufficient volume of sample is not present in the piezometer to collect all of the required volume, the analyses will be performed in the following order: specific gravity, kinematic viscosity, TCL SVOCs, TCL VOCs, TCL pesticides/PCBs, TCLP inorganics, TCLP organics, TAL metals and cyanide and gas chromatography fingerprinting. MS/MSD analyses will be provided only if sufficient sample volume is available to run all of the analyses. The sample volume, containers, and preservation requirements are shown in Table 3. All of the samples will be submitted to RMAL Laboratory (RMAL), located in Arvada, Colorado. Based on the results of these sample analyses and the data regarding distribution of the NAPL, it may be necessary to collect samples from additional NAPL locations and analyze for a modified list of parameters.

With the exception of gas chromatography fingerprinting, the analyses will be performed in accordance with the procedures specified in the ~~Quality Assurance Project Plan~~ (QAPP) Addendum, dated January 1992. The gas chromatography fingerprinting procedures are not specified in the QAPP. However, because the results of the gas chromatography fingerprinting will be used only as an attempt to determine if different types of NAPL are present at the site, the analytical method does not require as strict a set of QA/QC procedures as the rest of the analyses, and no revision of the QAPP is considered necessary.

The NAPL sample will be collected as follows:

- The interface probe, bailer, rope, and any other equipment to be inserted in the well will be decontaminated in accordance with the procedures presented in Section 5.2 of the SAP.
- The depth to water and the depth to the NAPL will be measured by using the interface probe.
- A clear, bottom-filling, Teflon bailer will be dedicated to the well and used to withdraw the NAPL sample.
- The sample will then be dispensed from the bailer into jars supplied by RMAL as indicated in Table 3.
- The NAPL samples do not require preservation, but will be cooled to 4°C for shipment to RMAL.